



**In the United States Patent and Trademark Office**

Serial Number: 10/820,561 )  
Filing Date: 4/8/2004 ) Examiner: Armando Rodriguez  
Applicant: Tong Zhang )  
Appn. Title: Single-Mode Operation and Frequency ) GAU: 2828  
Conversions for Solid-State Lasers )  
Fax: 571-273-8300

Fax via computer on February 21, 2011  
Salt Lake City, UT 84115

COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, VA 22313-1450

**Amendment / Remarks and Argument**

Sir:

This amendment is in reply to the Office action of "Petition Decision" dated January 6, 2011 and in compliance with its request for "a separate amendment" before the Examiner. The Office action was in response to applicant's petition filed November 15, 2010.

Applicant was kindly advised by the Attorney via phone conversation on 02/17/2011 that petitioner can send a new petition for reconsideration with a separate amendment first. Later if failed petitioner could file a submission with new argument and fee for RCE before the Examiner.

On the other hand, this amendment is also in reply to the Office action of "Petition Decision" dated October 8, 2010 so as to provide remarks and argument on the Examiner's comments. The Office action is in response to applicant's petition filed September 7, 2010, to revive the above-identified application.

In the last section of "Petition Decision" dated October 8, 2010, i.e., the section of "The present petition and amendment", it states that "As to item (1), the Examiner has reviewed the Amendment filed February 16, 2010, and concluded that the Amendment fails to place the application in condition for allowance. ---". However, the Examiner in his comments has made a misunderstanding in laser physics and a basic mistake in the principle and concept about a patent.

First at all, as mentioned before the cited prior art of Siebert (US 3582815) is totally not relevant to the present case. There is a fundamental difference in the laser physics and in the approach in realizing single axial mode operation between a continue-wave (CW) solid-state laser and a pulsed solid-state laser. Siebert's patent is for the case of pulsed solid-state lasers, or solid-state lasers operating in a pulsed mode, but not fitting for the case of CW solid-state lasers. The above-identified application is for the case of CW solid-state lasers.

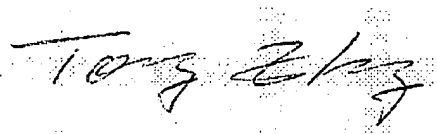
Pulsed solid-state lasers do not have the so-called green problem. In other words, it is pretty easy and does not need some special approach as required in the CW mode operation, in order to realize single axial mode operation, or single longitudinal mode (SLM) operation. As a result, therefore, SLM operation with the pulsed mode had been realized long before that with the CW mode.

**The so-called "green problem" is resulted from "spatial interference effect" or "spatial hole burning effect" and only exists in CW solid-state lasers.** Only CW solid-state laser needs to eliminate or minimize such an effect in order to realize SLM operation. The relevant explanation and description have been clearly presented in the document of "Status of claims and support for claim changes" submitted on February 10, 2010, particularly the section 5 "Description for Claim 10" and section 6 "Reason for Patent." Please note that there are three limitations in claim 10 but not including SLM operation. (See attached bellow)

As to the basic mistake in the principle and concept about a patent, there are many valid patents for laser operations and for single axial mode operation. However, the term of "laser operations" or "single axial mode operation" is not a forbiddance to obtain a patent.

Applicant believes that the Amendment filed February 16, 2010 would place the application in condition for allowance, and respectfully requests the Examiner to remember to allow entering the document of "Amendments to the Specification" resubmitted on January 22, 2008, including the amendment for the TITLE in the printed patent.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Tong Zhang", with a stylized flourish at the end.

Tong Zhang, Applicant Pro Se  
474 E. Lambourne Ave., # 3  
Salt Lake City, UT 84115

t\_zhang50@yahoo.com  
(801) 359-4560